

# Project Supply Chain Strategizies: A Step towards Building Option

Syafrida Hafni Sahir<sup>\*1</sup>, R Rosmawati<sup>#2</sup>, Anik Ratnawati<sup>#3</sup>, Dwi Ermayanti Susilo<sup>#4</sup>, Muprihan Thaib<sup>#3</sup>, Noer Soetjipto<sup>#5</sup>, Faurani Santi Singagerda<sup>#3</sup>, Ari Riswanto<sup>#6</sup>, Dedi Putra<sup>#3</sup>

<sup>\*1</sup>Universitas Medan Area, Medan, Indonesia.

<sup>#2</sup>Institut Sains dan Teknologi TD Pardede, Medan, Indonesia.

<sup>#3</sup>Faculty of Economics and Business, Darmajaya Institute of Business and Informatics, Lampung, Indonesia.

<sup>#4</sup>STIE PGRI Dewantara Jombang, Jawa Timur, Indonesia.

<sup>#5</sup>STIE YAPAN, Surabaya, Indonesia.

<sup>#6</sup>Universitas Pendidikan Indonesia, Bandung, Indonesia.

Corresponding author: E-mail: syahaf@yahoo.com

**Abstract**— For organization, agencies and governments, the supply chain strategies of capital projects are the source of many challenges. For design, delivery and development as concern with time and money these kinds of projects require a design of resources and chains. This article looks at some of these themes and includes: the need for alignment between supply chain strategy and the project concept; dealing with complexity, in particular the systematic and interrelatedness within project decisions; consideration of the ambiguity implicit in all major projects. Basically it takes many years to design and delivery of a project. The final complete project expected to be useful for several years.

**Keywords**- capital; supply chain strategy; organization; project.

## 1. Introduction

Organizational alignment research spans the strategic management, supply chain management and project management literatures, and links organizational activities with strategy and competitive advantage. For adaptability to change in future and to design an end product is very challenging. It can make a discord between project team and it creates the tension. As varying knowledge and different foundation, different abilities, and power, it is very difficult to agree on a strategy if there is a project which has multiple partners. There is need to design a project according to that considers flexibility to the change in future.

There is need to design a plan that create a balance between short term reasonableness and long-term flexibility. They should agree to adopt a common plan. In [1] shows that there is a requirement to design a formal structure to create the front-end methodologies. And it should provide the economical management of the project if there make any change in the future.

Capital project's theory for the management in the present practices and designing the literature finds many confinements by [2]. As interest in plan adaptability is like purchasing choices that's why member of project usually resort the genuine alternatives thinking. The changes

options can be acquire if future changes are negligible or positive the alternatives. If the changes are not according to the condition, it would be the lost of investment.

It is described by the researchers that in between the designing stage the current working is not satisfactory for decision making. The researcher describes a formal structure to help the project team with efficient decision making, and sound in building option. The introduced framework enhances the quality of result and it also improves the responsibility of the team of the project as it is based on the concept of risk management, and result of experiments.

The [3] design a structure for design adaptability toward the front end. It improves the communication between members of the team and improves the ability of the risk management, decrease the cost and also increase the efficiency.

## 2. Literature Review

This research joins two principle writing streams that have remained generally dissimilar in earlier work: Literature on the administration of capital activities and on genuine alternatives. The mix of these two research streams was appropriate to inquire about approaches to improve the nature of undertaking front-end strategizing, a thought center to the administration of capital activities [4, 5]. The writing on the administration of significant ventures reveals insight into the significance of putting right off the bat in front-end strategizing to decrease ineffective structure emphases [6, 7]. It likewise clarifies the fluffy idea of front-end strategizing where task groups create stories and settle on key plan choices under high vulnerability about the future conditions of the world [8]. Shockingly, in any case, this writing has been not really joined with writing on genuine alternatives, an examination stream that offers hypothesis and a pile of techniques and systems valuable to enable people to settle on key venture choices under vulnerability [9]. Truly, the potential for crossing the two writing streams has been revealed in earlier works [10]. In [11] coin the idea of "choices in ventures" to diverge from standard vital speculation writing on "alternatives on undertakings." The last research

stream is settled in the realm of account. It relates to the utilization of genuine choices hypothesis to advise capital speculation choices at a full scale level of examination. This vein of work may investigate, for instance, the general monetary estimation of an airplane terminal, thinking about its capability to extend later on [12]. Conversely, the work on alternatives in ventures is still in its early stages. It centers around the issue of evaluating the benefit of structure specific choices in the plan meaning of another capital task. Idea configuration is an errand vital to front-end strategizing another capital speculation [13-16]. The development and operations supply chains has to be balanced in a cost and value perspective, and these supply chains constitute the competitive entity which establish the competitive position of the project. As such we may say that the supply chain and thereby supply chain

management are issues that should be of interest for the organizations, in developing competitiveness.

### 3. Research Design

In this approach there are two stages are consider. These stages are connected to each other. To make the conceptual knowledge in the 1st stage fieldwork information are gathered. Design for evolvability in real world projects is applied it is known as future-proofing practices. Through an implanted contextual analysis with NR and through an exploratory contextual investigation Writing in genuine alternatives is utilized to understand the experimental information gathered. To understand the use of logic in front end strategizing, the field study was used. This study act as a basic studies that helps for future stage in their research.

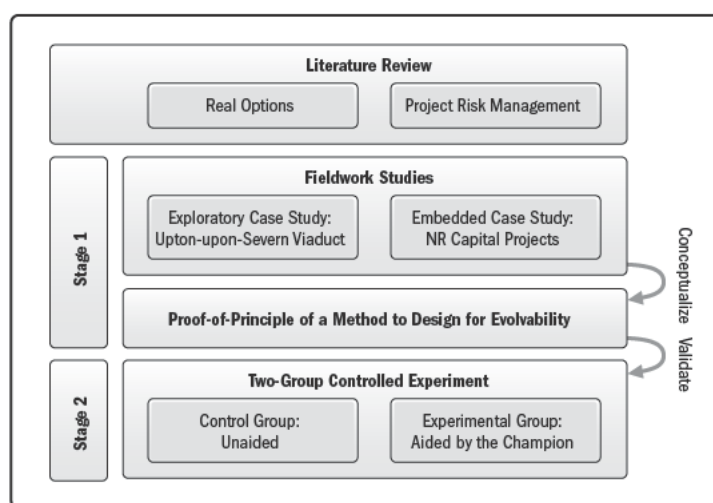


Figure 1. Research method

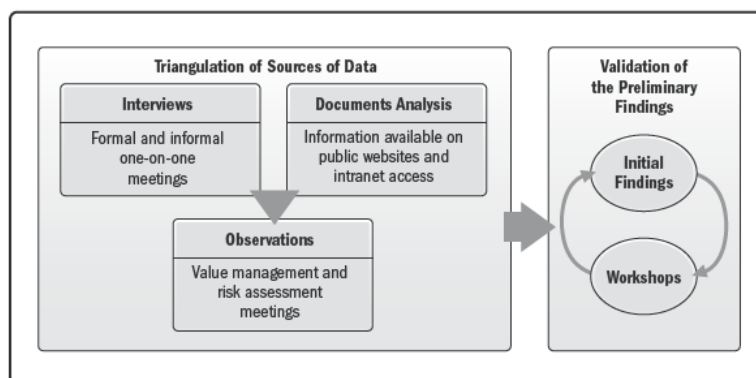


Figure 2. Triangulation of the findings

### 4. Project Front end Strategy

Front end developer is always responsible for the implementation of the requirement of the client directly. They are directly in contact with the user.

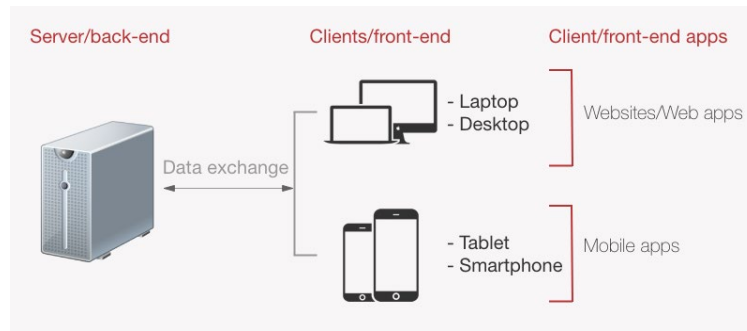


Figure 3. Front end and back end strategy

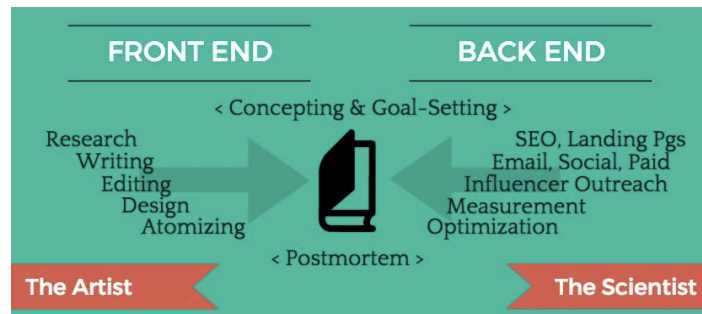


Figure 4. Project front end vs. project back end

### 5. Capital Project Front-End Strategizing

When a project idea is imagined then front end phase of a project is begins and it close when the final project is made. To get the right viewpoint of project the front end management is used. As consider the benefits of the front end strategy it cost effective and improve the productivity

of the product. It is shown in the figure below. It is in this manner that course readings in task the board, just as educational plans in venture the board addressed in colleges will in general confine their attention on the more point by point arranging and execution stage where the potential for real upgrades are progressively negligible in relative terms.

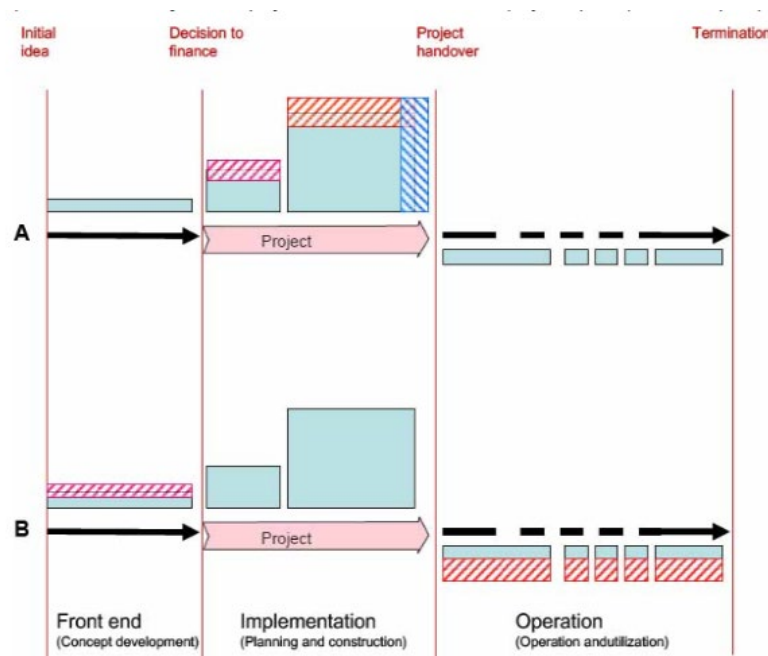


Figure 5. project over its life cycle

We can consider Capital project as a long term investments. They need different and huge assets, like capital, knowledge, political support, land, finance etc. These resources are managed from different ways. They are own by different partners and they concern about the

design of the final project. In the private public circle sewerages and dams are the most commonly used capital projects. Transports and utilization of networks and waterworks are considered for these projects. To build a huge project or manage the capital in the corporate world

the capital projects are widely recognized. Large amount of resources are define in factories and it provide the facilities of extraction of assess.

It is require to simple the option logic so it can easily accepted by the members in capital project environment.

**Table 1.** Qualitative comparison of the usability of the front-end strategizing process between the two groups

Usability of the front-end strategizing	Control Group (no framework, not aided)	Experimental Group (using the framework, and aided by a champion)
<b>Efficiency</b>	<b>Low</b> Teams experienced conflict between divergent interests due to poor communication. Teams tended to engage in unstructured and unguided debates.	<b>High</b> Teams more likely to demonstrate creative thinking and ingenuity. Teams generally managed to engage in timely and productive exchanges of information.
<b>Effectiveness</b>	<b>Moderate</b> As the teams ran out of time (as a consequence of the lack of efficiency), they struggled to pin down their strategic recommendations.	<b>High</b> Teams managed to resolve major issues including which stakeholders were more likely to benefit from particular options, who should pay for them, and who had the wherewithal to provide the additional funding. Teams were receptive to borrow the options logic constructs to frame the discussions.
<b>Satisfaction</b>	<b>Moderate</b> Some participants demonstrated their discontentment with the time-consuming process and with pointless conversations.	<b>Moderate</b> Participants did not perceive the design for evolvability proposition as unnecessarily redundant and bureaucratic. Some of them even highlighted the usefulness of having a design for evolvability champion.

## 6. NPD Process Flow

For many organization it is very difficult to manage and development a best product. It is require developing a product that match the current strategy of market and technology. Also there is need to manage the internal changes of organization for achieving the effective and excellent product. Although there exist some conflict but every organization work to enhance its ability and effectiveness under the critical situation.

To develop and manage the great product boosting product line method is very important. All the member know their work and strategy and they work for converting poor to good strategy.

## 7. Design for evolvability at project front-end strategizing

There is need to design and make the resources that use as cost friendly and follow the requirements, this is the

At the front end of project the decision makers face the problem of deficiency of resources and make decision urgently. To underwrite arduous diagnostic techniques for simple decision making make it difficult for them to underwrite.

basic issue in the capital world. These types of resources deliver in several years and design for many years so that can operate. But the external environment should be evolving during the service lifetime and delivery of project. In operational and functional needs the external events should be trigger change. The cost of the adaption is considered as the flexibility function [17]. If the design of the resource has limited flexibly then After completion of project the changes can be very costly [18].

In the project management the risk management consider as the central of the requirement [6]. The literature describe the front end strategies and shows the impact on the result of project's quality. It also consider the time that will take to complete the project life [13].

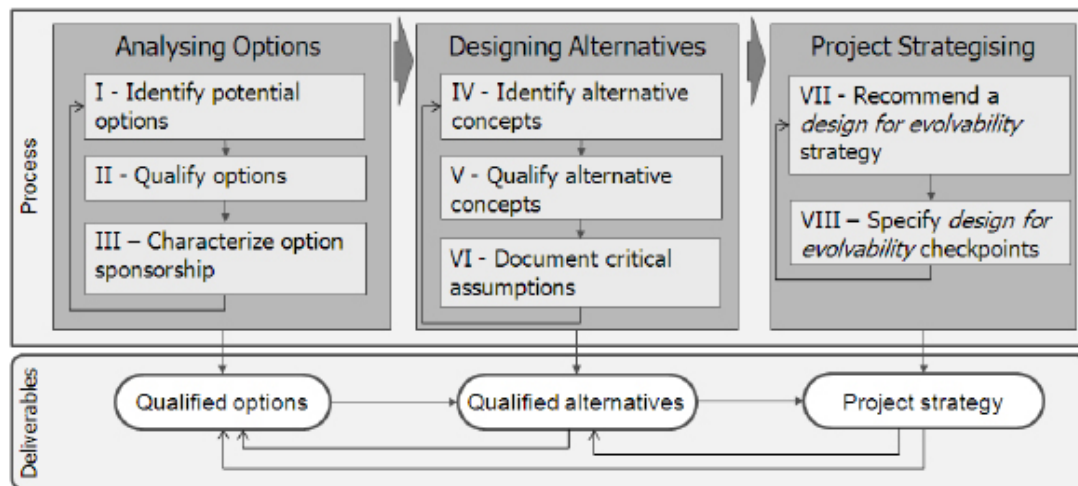


Figure 6. Schematic representation of the design for evolvability method

## 8. Conclusion

Developing and implementing a supply chain strategy is essential for maintaining competitive position. As part of the strategy development process, firms must select projects that best achieve strategy. Logistics and supply chain management as one issue for competitiveness. To adapt the changes that is done in a capital project delivery time and later in between the operational lifetime of resources the study provide a bit of knowledge on system. The study is related to the team of capital project in between the front end strategies. It give the knowledge about the development and design of new capital resources that can be cost effective if there require any changes in future. The research tries to design a formal structure for designing the flexibility on the front end of the project. It helps to improve the communication between the members of the team, reduce the cost, improve efficiency, helps to reduce risk, and provide a good decision making.

## References

- [1] Morris, P. W. G. (1994). *The management of Projects*. London: Thomas Telford.
- [2] Morris, P. W. G. (2011). *A brief history of project management*. The Oxford Handbook of Project Management (pp. 15–36). Oxford: Oxford University Press.
- [3] Gil, N., (2007). On the value of project safeguards: embedding real options in complex products and systems. *Research Policy*, 36, 980–999.
- [4] Neufville, R. de, & Scholtes, S. (2011). *Flexibility in engineering design*. MIT Press.
- [5] Trigeorgis, L. (1996). *Real options, Managerial flexibility and strategy in resource allocation*. Cambridge, MA: MIT Press.
- [6] Ford, D. N., Lander, D. M., & Voyer, J. J. (2002). A real options approach to valuing strategic flexibility in uncertain construction projects. *Construction Management and Economics*, 20(4), 343–351.
- [7] Wang, T., & De Neufville, R. (2005). Real options “in” projects. 9th Annual International Conference Real Options. Paris, France.
- [8] Zhao, T., Sundararajan, S. K., & Tseng, C.-L. (2004). Highway development decision-making under uncertainty: a real options approach. *Journal of Infrastructure Systems*, 10(1), 23–32.
- [9] Trigeorgis, L., & Smit, H. T. J. (2009). Valuing infrastructure investment: an option games approach. *California Management Review*, 51(2), 79–100.
- [10] Gil, N., (2007). On the value of project safeguards: embedding real options in complex products and systems. *Research Policy*, 36, 980–999.
- [11] Guma, A., Pearson, J., Wittels, K., Neufville, R. de, & Geltner, D. (2009). Vertical phasing as a corporate real estate strategy and development option. *Journal of Corporate Real Estate*, 11(3), 144–157.
- [12] Neufville, R. de, & Scholtes, S. (2011). *Flexibility in engineering design*. MIT Press.
- [13] Miller, R., & Lessard, D. (2007). *Evolving strategy: Risk management and the shaping of large engineering projects*. MIT Sloan School of Management.
- [14] Chapman, C., & Ward, S. (1998). *Project risk management: Processes, techniques and insights*. Chichester, UK: John Wiley & Sons.
- [15] Lessard, D., & Miller, R. (2000). *Mapping and facing the landscape of risks. The strategic management of large engineering projects*. Cambridge, MA: The MIT Press.
- [16] Sazesh, A., & Siadat, S. A. (2018). The Relationship between Quantum Management and Organizational Agility in Ministry of Roads and Urban Development of Golestan Province, Iran. *Dutch Journal of Finance and Management*, 2(2), 51. <https://doi.org/10.29333/djfm/5827>
- [17] Morris, P. W. G. (1994). *The management of projects*. London: Thomas Telford.
- [18] Saidi, S. S., & Siew, N. M. (2019). Assessing Students’ Understanding of the Measures of Central Tendency and Attitude towards Statistics in Rural Secondary Schools. *International Electronic Journal of Mathematics Education*, 14(1), 73-86. <https://doi.org/10.12973/iejme/3968>